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TITLE: Human telomerase catalytic subunit: diagnostic and therapeutic methods

DATE-ISSUED: November 5, 2002

## INVENTOR-INFORMATION:

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US-CL-CURRENT: 435/366; 424/94.1, 435/320.1, 435/69.1, 536/23.2

## CLAIMS:

What is claimed is:

1. A mammalian cell that contains a recombinant polynucleotide comprising a nucleic acid sequence that encodes a telomerase reverse transcriptase protein, variant, or fragment having telomerase catalytic activity when complexed with a telomerase RNA, wherein said recombinant polynucleotide hybridizes to a DNA having a sequence complementary to SEQ ID NO: 1 at 5.degree. C. to 25.degree. C. below T.sub.m in aqueous solution at 1 M NaCl, wherein T.sub.m is the melting temperature of a complementary polynucleotide hybridized to said DNA in aqueous solution at 1M NaCl, wherein the complementary polynucleotide is exactly complementary to SEQ ID NO: 1 and is the same length as the recombinant polynucleotide.
2. The mammalian cell of claim 1, wherein the recombinant polynucleotide encodes a full-length naturally occurring human telomerase reverse transcriptase.
3. The mammalian cell of claim 2, which expresses said encoding sequence at the mRNA level, as measured by PCR amplification.
4. The mammalian cell of claim 1, which expresses said encoding sequence at the protein level, as measured by immunoassay.
5. The mammalian cell of claim 1, which has telomerase activity, as measured in a primer elongation assay.
6. The mammalian cell of claim 1, which is a human cell.
7. The mammalian cell of claim 6, which is a stem cell.
8. The mammalian cell of claim 1, which is a stem cell.